

# CLOCK EXHIBITION ROOM

## THE RAILWAY CLOCK

### THE RAILWAY AND TIME

The railway changed the concept of time forever. Before its arrival, people's perception of time was a lot less precise than today. However, in the case of railway operations, the clock and time were essential; timetables, departures, arrivals, crossings of trains... all of this required an accurate measuring of time. In railway stations, the clock became an indispensable element on façades, in lobbies, platforms and control offices.

### STANDARDISING TIME



Up until 1901 each region adhered to the solar time of its capital, which made it very difficult to establish train itineraries. For example, there was a time difference of 42 minutes and 13 seconds between Barcelona and A Coruña. In order to try to overcome this obstacle, the *Railway Police Regulations* of 1859 stipulated that each railway company should adopt, as its official time, that of the main locality on its lines. In 1878, as a result of the progressive extension of railway lines, all those connected to the capital adopted the time of the

Royal Astronomical Observatory in Madrid, whose signal was telegraphed to train stations. However, railway time and civil time were still different, which gave rise to confusion. The main railway companies pressed for a standardised time system and, finally, in 1900, Spain adopted the Washington agreement of 1884 that divided the planet into 24 time zones. On January 1, 1901, all Spanish railways, as well as the main national organisations, started adhering to Greenwich Mean Time.

In March 1940, Franco government adopted the Central European time zone (+ 1h), by which we are still governed. In this way, Madrid and Warsaw have the same time even though they are 2,850 kilometers away, however we keep an hour longer with respect to Lisbon, which is only 625 kilometers away.

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## The “Mataró” clock



On October 28, 1848, the first railway line was opened in the Iberian Peninsula, from Barcelona to Mataró. In order to solemnise the occasion, a stand was set up for the blessing ceremony featuring a clock to indicate when the convoy should depart.

A century later, in 1948, this clock was featured prominently at the large exhibition held in Barcelona to mark the railway’s centenary.

It is a tall-case clock with a French *Morez* or *Comtoise* mechanism. The sphere consists of a single piece of alabaster, with twelve glazed porcelain cartouches housing the Roman numerals in blue, and a complementary sphere with a second hand featuring Arabic numbers. It is a repetition clock, which has three bells that chime every hour and every quarter of an hour, featuring an anchor escapement mechanism and lyre pendulum. Its force comes from two weights, one for the mechanism and another for the chimes. The wooden case is decorated with polychrome plant motifs.

## Office clock



In addition to a clock in the lobby, train stations could have clocks in the stationmaster’s office or in other offices. They were usually tall-case or porthole clocks, although there were also desktop ones, featuring a winding mechanism until electric clocks became common. When the hourly signal was received, the stationmaster jotted it down in a notebook and indicated, where applicable, the numbers of minutes that the clock was (or clocks were) fast or slow. He could therefore know the exact time even if they were not well adjusted. The telegraph inspector or “monitor” visited the stations in his section every week to wind up all the clocks and set them.

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## Master clock and platform clock

Madrid's Astronomy Observatory sent an hourly signal to the railways' terminus stations, which initiated the "pass on the time" operation by telegraph or telephone. Each station received the signal and notified the stationmaster, who adjusted the master clock inside his office and recorded the difference.



The (tall-case) **master clock** controlled the platform clock by means of a rigid mechanism, which went through the wall and activated the hands of the platform or receptor clock.



The **platform clock** (a two-faced angular or "wedge"-shaped clock) did not have its own mechanism; it was a receptor, peripheral or secondary clock.

## Pocket watch



In the late 19<sup>th</sup> century, pocket watches began to be made that were affordable for the working class. They were robust and sturdy, but capable of keeping time accurately. They were a must for stationmasters, train managers and engineers, who had to adjust them to the time of each station.

Starting in 1901, the day was divided into 24 hours, thereby overcoming the confusion that arose from the previous system that divided the day into morning, afternoon/evening and night. This gave rise to clocks whose sphere was divided into 24 hours, although it was finally decided to mark railway clocks with two concentric circles, from I to XII in Roman numerals and 13 to 24 in red Arabic numbers.

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## Time clock



The increasing number of railway workers made it necessary to use a mechanised clock-in system, whose record provided the information required by those in charge of managing human resources.

These clocks began to be manufactured at the end of the 19<sup>th</sup> century. Each worker inserted a card and activated a lever, thereby stamping the time they clocked in and out. Time clocks were subsequently replaced by electric clocks, which recorded the time automatically when the card was inserted.

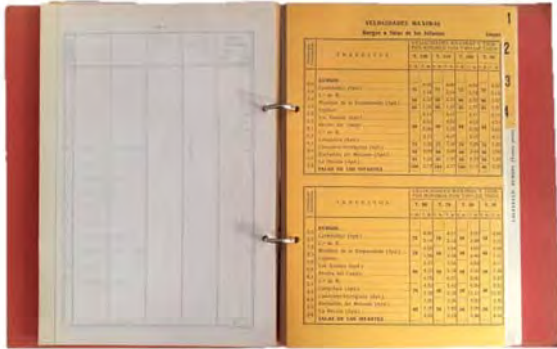
## Timetable handbooks – Travel guides



Railway companies aimed to be as punctual as possible in providing their services. They therefore published their timetables, inserted as notifications in local newspapers, brochures and pocketbooks. The first timetable handbooks and travel guides soon appeared, which, in addition to providing details about itineraries and ticket prices, included descriptions of tourist attractions found along the way. Sometimes they were illustrated with maps, views and prints, as well as adverts for hotels, restaurants, boarding houses, spas and other services.

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## Circulation or itinerary guides



Train engineers used circulation guides to ascertain the official travel times established for a certain route, maximum speeds, incidents like unscheduled stops or speed restrictions and changes, as well as other relevant information for operating trains.

## Watchman or inspection clock



This was used to make sure that the inspection round had been carried out correctly. At different points along the way, there was a key attached to a chain that, when inserted into the clock and turned, marked on a paper disc or ribbon the number of the office and the time. A special device on the cover indicated if the clock had been opened without authorisation, thereby ensuring that the time could not be manipulated.